

# SEARCH NOTES

Connecting via Winsock to STN

10/083,283

28 SEPTEMBER 2006

Welcome to STN International! Enter x:x

LOGINID:sssptaul87mxw

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

\*\*\*\*\* Welcome to STN International \*\*\*\*\*

NEWS 1 Web Page URLs for STN Seminar Schedule - N. America  
 NEWS 2 "Ask CAS" for self-help around the clock  
 NEWS 3 FEB 27 New STN AnaVist pricing effective March 1, 2006  
 NEWS 4 MAY 10 CA/CAPLUS enhanced with 1900-1906 U.S. patent records  
 NEWS 5 MAY 11 KOREAPAT updates resume  
 NEWS 6 MAY 19 Derwent World Patents Index to be reloaded and enhanced  
 NEWS 7 MAY 30 IPC 8 Rolled-up Core codes added to CA/CAPLUS and  
 USPTAFULL/USPTA2  
 NEWS 8 MAY 30 The F-Term thesaurus is now available in CA/CAPLUS  
 NEWS 9 JUN 02 The first reclassification of IPC codes now complete in  
 INPADOC  
 NEWS 10 JUN 26 TULSA/TULSA2 reloaded and enhanced with new search and  
 and display fields  
 NEWS 11 JUN 28 Price changes in full-text patent databases EPFULL and PCTFULL  
 NEWS 12 JUL 11 CHEMSAFE reloaded and enhanced  
 NEWS 13 JUL 14 FSTA enhanced with Japanese patents  
 NEWS 14 JUL 19 Coverage of Research Disclosure reinstated in DWPI  
 NEWS 15 AUG 09 INSPEC enhanced with 1898-1968 archive  
 NEWS 16 AUG 28 ADISCTI Reloaded and Enhanced  
 NEWS 17 AUG 30 CA(SM)/CAPLUS(SM) Austrian patent law changes  
 NEWS 18 SEP 11 CA/CAPLUS enhanced with more pre-1907 records  
 NEWS 19 SEP 21 CA/CAPLUS fields enhanced with simultaneous left and right  
 truncation  
 NEWS EXPRESS JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT  
 MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
 AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.  
 NEWS HOURS STN Operating Hours Plus Help Desk Availability  
 NEWS LOGIN Welcome Banner and News Items  
 NEWS IPC8 For general information regarding STN implementation of IPC 8  
 NEWS X25 X.25 communication option no longer available

Enter NEWS followed by the item number, or name to see news on that  
 specific topic.

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 agreement. Please note that this agreement limits use to scientific  
 research. Use for software development or design or implementation  
 of commercial gateways or other similar uses is prohibited and may  
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\*\*\*\*\* STN Columbus \*\*\*\*\*

FILE 'HOME' ENTERED AT 11:44:44 ON 22 SEP 2006

=> file medline

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

	ENTRY	SESSION
FULL ESTIMATED COST	0.21	0.21

FILE 'MEDLINE' ENTERED AT 11:44:51 ON 22 SEP 2006

FILE LAST UPDATED: 21 Sep 2006 (20060921/UP). FILE COVERS 1950 TO DATE.

On December 11, 2005, the 2006 MeSH terms were loaded.

The MEDLINE reload for 2006 is now (26 Feb.) available. For details on the 2006 reload, enter HELP RLOAD at an arrow prompt (=>).  
See also:

<http://www.nlm.nih.gov/mesh/>  
[http://www.nlm.nih.gov/pubs/techbull/nd04/nd04\\_mesh.html](http://www.nlm.nih.gov/pubs/techbull/nd04/nd04_mesh.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_med\\_data\\_changes.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_med_data_changes.html)  
[http://www.nlm.nih.gov/pubs/techbull/nd05/nd05\\_2006\\_MeSH.html](http://www.nlm.nih.gov/pubs/techbull/nd05/nd05_2006_MeSH.html)

OLDMEDLINE is covered back to 1950.

MEDLINE thesauri in the /CN, /CT, and /MN fields incorporate the MeSH 2006 vocabulary.

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> aging model?

AGING IS NOT A RECOGNIZED COMMAND

The previous command name entered was not recognized by the system.

For a list of commands available to you in the current file, enter

"HELP COMMANDS" at an arrow prompt (=>).

=> s aging model?

171692 AGING

1201108 MODEL?

L1 101 AGING MODEL?

(AGING (W) MODEL?)

=> s human and l1

1418397 HUMAN

L2 25 HUMAN AND L1

=> s mouse and l2

336136 MOUSE

L3 0 MOUSE AND L2

=> d ti l2 1-25

L2 ANSWER 1 OF 25 MEDLINE on STN

TI Matrix metalloproteinase 2 and tissue inhibitors of metalloproteinases regulate human aortic smooth muscle cell migration during in vitro aging.

L2 ANSWER 2 OF 25 MEDLINE on STN

TI Histological evidence of the altered distribution of osteocytes and bone matrix synthesis in klotho-deficient mice.

L2 ANSWER 3 OF 25 MEDLINE on STN

TI Estrogen: a neuroprotective or proinflammatory hormone? Emerging evidence from reproductive aging models.

L2 ANSWER 4 OF 25 MEDLINE on STN

TI Genes, phenes, and dreams of immortality: the 2003 Kleemeier Award lecture.

L2 ANSWER 5 OF 25 MEDLINE on STN  
 TI Age-related decline in expression of calnexin.

L2 ANSWER 6 OF 25 MEDLINE on STN  
 TI Effect of wolfberry fruit and epimedium on DNA synthesis of the aging-youth 2BS fusion cells.

L2 ANSWER 7 OF 25 MEDLINE on STN  
 TI [Cytogerontology at the beginning of the third millenium: from "correlative" to "gist" models].  
 Tsitogerontologgie v nachae tret'ego tysiacheletiia: ot "korreliativnykh" i "sushchnostym" modeliam.

L2 ANSWER 8 OF 25 MEDLINE on STN  
 TI Gene expression profiling in Werner syndrome closely resembles that of normal aging.

L2 ANSWER 9 OF 25 MEDLINE on STN  
 TI [Results and perspectives of cytogerontologic studies in modern time].  
 Itogi i perspektivy tsitogerontologicheskikh issledovaniy na sovremennom etape.

L2 ANSWER 10 OF 25 MEDLINE on STN  
 TI Prediction of osteoporotic spinal deformity.

L2 ANSWER 11 OF 25 MEDLINE on STN  
 TI Gene profile of replicative senescence is different from progeria or elderly donor.

L2 ANSWER 12 OF 25 MEDLINE on STN  
 TI Biologic activity of mitochondrial metabolites on aging and age-related hearing loss.

L2 ANSWER 13 OF 25 MEDLINE on STN  
 TI Distribution of beta-amyloid and amyloid precursor protein in the brain of spawning (senescent) salmon: a natural, brain-aging model.

L2 ANSWER 14 OF 25 MEDLINE on STN  
 TI T-lymphocyte long-term cultures have a constant histone variant pattern during aging.

L2 ANSWER 15 OF 25 MEDLINE on STN  
 TI Light history and age-related changes in retinal light damage.

L2 ANSWER 16 OF 25 MEDLINE on STN  
 TI The production of the Alzheimer amyloid precursor protein (APP) in extraneuronal tissue does not increase in old age.

L2 ANSWER 17 OF 25 MEDLINE on STN  
 TI Deregulation of collagen phagocytosis in aging human fibroblasts: effects of integrin expression and cell cycle.

L2 ANSWER 18 OF 25 MEDLINE on STN  
 TI Optical density of the human lens.

L2 ANSWER 19 OF 25 MEDLINE on STN  
 TI Heat shock response, heat shock transcription factor and cell aging.

L2 ANSWER 20 OF 25 MEDLINE on STN  
 TI Altered transcriptional regulation of human interstitial collagenase in cultured skin fibroblasts from older donors.

L2 ANSWER 21 OF 25 MEDLINE on STN  
 TI [Enzymatic DNA methylation as an aging mechanism].  
 Enzimaticheskoe metilirovanie DNK kak mekhanizm starenia.

L2 ANSWER 22 OF 25 MEDLINE on STN  
 TI Cytochrome oxidase activity in bovine and human retinal pigment  
 epithelium: topographical and age-related differences.

L2 ANSWER 23 OF 25 MEDLINE on STN  
 TI Effect of procaine on cultivated human WI-38 fibroblasts.

L2 ANSWER 24 OF 25 MEDLINE on STN  
 TI In vitro assessment of keratinocyte aging.

L2 ANSWER 25 OF 25 MEDLINE on STN  
 TI Aging model for unexposed human dermis.

=> d his

(FILE 'HOME' ENTERED AT 11:44:44 ON 22 SEP 2006)

FILE 'MEDLINE' ENTERED AT 11:44:51 ON 22 SEP 2006

L1 101 S AGING MODEL?  
 L2 25 S HUMAN AND L1  
 L3 0 S MOUSE AND L2

=> s human aging  
 1418397 HUMAN  
 171692 AGING  
 L4 597 HUMAN AGING  
 (HUMAN (W) AGING)

=> s model?  
 L5 1201108 MODEL?

=> s l4 and l5  
 L6 172 L4 AND L5

=> d ti 1-10

L6 ANSWER 1 OF 172 MEDLINE on STN  
 TI The differential effects of age on the association of KLOTHO gene  
 polymorphisms with coronary artery disease.

L6 ANSWER 2 OF 172 MEDLINE on STN  
 TI p16 is a robust in vivo biomarker of cellular aging in human skin.

L6 ANSWER 3 OF 172 MEDLINE on STN  
 TI Visuospatial function in the beagle dog: An early marker of cognitive  
 decline in a model of human aging and  
 dementia.

L6 ANSWER 4 OF 172 MEDLINE on STN  
 TI Of mice and monkeys: National Institute on Aging resources supporting the  
 use of animal models in biogerontology research.

L6 ANSWER 5 OF 172 MEDLINE on STN  
 TI Werner Syndrome as an example of inflamm-aging: possible therapeutic  
 opportunities for a progeroid syndrome?.

L6 ANSWER 6 OF 172 MEDLINE on STN  
 TI Does premature aging of the mtDNA mutator mouse prove that mtDNA mutations  
 are involved in natural aging?.

L6 ANSWER 7 OF 172 MEDLINE on STN  
 TI [Results from biomedical aging research. Trends and current examples from immunology].  
 Ergebnisse aus der biomedizinischen Altersforschung. Trends und aktuelle Beispiele aus der Immunologie.

L6 ANSWER 8 OF 172 MEDLINE on STN  
 TI Sustained inhibition of oxidative phosphorylation impairs cell proliferation and induces premature senescence in human fibroblasts.

L6 ANSWER 9 OF 172 MEDLINE on STN  
 TI The mellow years?: neural basis of improving emotional stability over age.

L6 ANSWER 10 OF 172 MEDLINE on STN  
 TI The aging hippocampus: a multi-level analysis in the rat.

=> d ti 11-30

L6 ANSWER 11 OF 172 MEDLINE on STN  
 TI Search for correlations between serotonin 5-HT1A receptor expression and cognitive functions--a strategy in translational psychopharmacology.

L6 ANSWER 12 OF 172 MEDLINE on STN  
 TI The role of androgens in cognition and brain aging in men.

L6 ANSWER 13 OF 172 MEDLINE on STN  
 TI Rules for the use of model organisms in anti-aging pharmacology.

L6 ANSWER 14 OF 172 MEDLINE on STN  
 TI Exploiting the rodent model for studies on the pharmacology of lifespan extension.

L6 ANSWER 15 OF 172 MEDLINE on STN  
 TI Long-term caloric restriction ameliorates the decline in diastolic function in humans.

L6 ANSWER 16 OF 172 MEDLINE on STN  
 TI Gene expression and DNA repair in progeroid syndromes and human aging.

L6 ANSWER 17 OF 172 MEDLINE on STN  
 TI Application of an automated voxel-based morphometry technique to assess regional gray and white matter brain atrophy in a canine model of aging.

L6 ANSWER 18 OF 172 MEDLINE on STN  
 TI The naked mole-rat: a new long-living model for human aging research.

L6 ANSWER 19 OF 172 MEDLINE on STN  
 TI Extended longevity and insulin signaling in adipose tissue.

L6 ANSWER 20 OF 172 MEDLINE on STN  
 TI Mice and flies and monkeys too: caloric restriction rejuvenates the aging immune system of non-human primates.

L6 ANSWER 21 OF 172 MEDLINE on STN  
 TI Multiscale multifractality analysis of a 12-lead electrocardiogram.

L6 ANSWER 22 OF 172 MEDLINE on STN  
 TI Genes, phenes, and dreams of immortality: the 2003 Kleemeier Award lecture.

L6 ANSWER 23 OF 172 MEDLINE on STN  
 TI Modeling premature aging syndromes with the telomerase knockout mouse.

L6 ANSWER 24 OF 172 MEDLINE on STN  
 TI Mechanisms of aging in senescence-accelerated mice.

L6 ANSWER 25 OF 172 MEDLINE on STN  
 TI Klotho insufficiency causes decrease of ribosomal RNA gene transcription activity, cytoplasmic RNA and rough ER in the spinal anterior horn cells.

L6 ANSWER 26 OF 172 MEDLINE on STN  
 TI Estimating haplotype relative risks on human survival in population-based association studies.

L6 ANSWER 27 OF 172 MEDLINE on STN  
 TI Imbalance of matrix metalloproteinase-9 and tissue inhibitor of matrix metalloproteinase-1 is associated with pulmonary emphysema in Klotho mice.

L6 ANSWER 28 OF 172 MEDLINE on STN  
 TI Cognitive impairment in aged rhesus monkeys associated with monoamine receptors in the prefrontal cortex.

L6 ANSWER 29 OF 172 MEDLINE on STN  
 TI The canine model of human cognitive aging and dementia: pharmacological validity of the model for assessment of human cognitive-enhancing drugs.

L6 ANSWER 30 OF 172 MEDLINE on STN  
 TI Further evidence for the cholinergic hypothesis of aging and dementia from the canine model of aging.

=> d ab 18

L6 ANSWER 18 OF 172 MEDLINE on STN  
 AB Tremendous variation in maximum life span among species overshadows modest increases in longevity resulting from experimental manipulation. Few aging studies focus on long-lived mammals even though these species may expose mechanisms involved in resisting aging. Naked mole-rats (NMRs approximately 35 grams) are the longest-living (>28.3 years) rodents known. This review describes their biology and potential use in aging research. Lifestyle features concur with most evolutionary theories with the exception of the disposable soma theory. Indeed, maximum life span is similar in breeders and nonbreeders, and these highly fecund animals reproduce until they die. Shared characteristics with calorie-restricted, methionine-restricted, and dwarf mice models of extended longevity include reduced body temperature; reduced thyroid, and blood glucose concentrations; and low glycated hemoglobin; in addition to reduced incidence of cancer. Young naked mole-rats surprisingly have high levels of accrued oxidative damage. With their similar longevity quotient to humans, these rodents may provide a novel opportunity to examine mechanisms modulating aging.

=> d ti 31-50

L6 ANSWER 31 OF 172 MEDLINE on STN  
 TI Epigenetic control of telomerase and modes of telomere maintenance in aging and abnormal systems.

L6 ANSWER 32 OF 172 MEDLINE on STN  
 TI Association between a functional variant of the KLOTHO gene and

high-density lipoprotein cholesterol, blood pressure, stroke, and longevity.

- L6 ANSWER 33 OF 172 MEDLINE on STN  
TI The future of aging therapies.
- L6 ANSWER 34 OF 172 MEDLINE on STN  
TI Haplotype effects on human survival: logistic regression models applied to unphased genotype data.
- L6 ANSWER 35 OF 172 MEDLINE on STN  
TI Immunohistochemical localization of Klotho protein in brain, kidney, and reproductive organs of mice.
- L6 ANSWER 36 OF 172 MEDLINE on STN  
TI Telomeres and human aging: facts and fibs.
- L6 ANSWER 37 OF 172 MEDLINE on STN  
TI Role of angiogenesis in bladder response to partial outlet obstruction.
- L6 ANSWER 38 OF 172 MEDLINE on STN  
TI Aging: gene silencing or gene activation?.
- L6 ANSWER 39 OF 172 MEDLINE on STN  
TI The use of mature zebrafish (Danio rerio) as a model for human aging and disease.
- L6 ANSWER 40 OF 172 MEDLINE on STN  
TI Measuring human aging using a two-compartmental mathematical model and the vitality concept.
- L6 ANSWER 41 OF 172 MEDLINE on STN  
TI What can progeroid syndromes tell us about human aging ?.
- L6 ANSWER 42 OF 172 MEDLINE on STN  
TI Aging in rhesus monkeys: relevance to human health interventions.
- L6 ANSWER 43 OF 172 MEDLINE on STN  
TI Establishment of a cell-based assay to screen regulators for Klotho gene promoter.
- L6 ANSWER 44 OF 172 MEDLINE on STN  
TI The bud scar-based screening system for hunting human genes extending life span.
- L6 ANSWER 45 OF 172 MEDLINE on STN  
TI Investigation of the signaling pathways involved in the proliferative life span barriers in werner syndrome fibroblasts.
- L6 ANSWER 46 OF 172 MEDLINE on STN  
TI From Hayflick to Walford: the role of T cell replicative senescence in human aging.
- L6 ANSWER 47 OF 172 MEDLINE on STN  
TI Regulation of telomerase by telomeric proteins.
- L6 ANSWER 48 OF 172 MEDLINE on STN  
TI How bioinformatics can help reverse engineer human aging
- L6 ANSWER 49 OF 172 MEDLINE on STN  
TI Assessing genetic association with human survival at multi-allelic loci.

L6 ANSWER 50 OF 172 MEDLINE on STN  
TI Mediation of spontaneous knee osteoarthritis by progressive chondrocyte ATP depletion in Hartley guinea pigs.

=> d his

(FILE 'HOME' ENTERED AT 11:44:44 ON 22 SEP 2006)

FILE 'MEDLINE' ENTERED AT 11:44:51 ON 22 SEP 2006

L1 101 S AGING MODEL?  
L2 25 S HUMAN AND L1  
L3 0 S MOUSE AND L2  
L4 597 S HUMAN AGING  
L5 1201108 S MODEL?  
L6 172 S L4 AND L5

=> s l6 ad mouse

MISSING OPERATOR L6 AD

The search profile that was entered contains terms or nested terms that are not separated by a logical operator.

=> s l6 and mouse

336136 MOUSE

L7 26 L6 AND MOUSE

=> d ti 1-26

L7 ANSWER 1 OF 26 MEDLINE on STN  
TI The differential effects of age on the association of KLOTHO gene polymorphisms with coronary artery disease.

L7 ANSWER 2 OF 26 MEDLINE on STN  
TI Does premature aging of the mtDNA mutator mouse prove that mtDNA mutations are involved in natural aging?.

L7 ANSWER 3 OF 26 MEDLINE on STN  
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L7 ANSWER 4 OF 26 MEDLINE on STN  
TI Mechanisms of aging in senescence-accelerated mice.

L7 ANSWER 5 OF 26 MEDLINE on STN  
TI Klotho insufficiency causes decrease of ribosomal RNA gene transcription activity, cytoplasmic RNA and rough ER in the spinal anterior horn cells.

L7 ANSWER 6 OF 26 MEDLINE on STN  
TI Immunohistochemical localization of Klotho protein in brain, kidney, and reproductive organs of mice.

L7 ANSWER 7 OF 26 MEDLINE on STN  
TI Establishment of a cell-based assay to screen regulators for Klotho gene promoter.

L7 ANSWER 8 OF 26 MEDLINE on STN  
TI The relationship between aging and carcinogenesis: a critical appraisal.

L7 ANSWER 9 OF 26 MEDLINE on STN  
TI [Aging and carcinogenesis].  
Starenie i kantserogenez.

L7 ANSWER 10 OF 26 MEDLINE on STN  
TI Klotho protein deficiency leads to overactivation of mu-calpain.



L7 ANSWER 11 OF 26 MEDLINE on STN  
TI Expression of Klotho protein in the inner ear.

L7 ANSWER 12 OF 26 MEDLINE on STN  
TI Differential proteome analysis of replicative senescence in rat embryo fibroblasts.

L7 ANSWER 13 OF 26 MEDLINE on STN  
TI Changes in bone structure and mass with advancing age in the male C57BL/6J mouse.

L7 ANSWER 14 OF 26 MEDLINE on STN  
TI Connection between B lymphocyte and osteoclast differentiation pathways.

L7 ANSWER 15 OF 26 MEDLINE on STN  
TI Disease model: human aging.

L7 ANSWER 16 OF 26 MEDLINE on STN  
TI The role of telomerase expression and telomere length maintenance in human and mouse.

L7 ANSWER 17 OF 26 MEDLINE on STN  
TI Decreased insulin production and increased insulin sensitivity in the klotho mutant mouse, a novel animal model for human aging.

L7 ANSWER 18 OF 26 MEDLINE on STN  
TI The Werner syndrome. A model for the study of human aging.

L7 ANSWER 19 OF 26 MEDLINE on STN  
TI Covalent modification of the Werner's syndrome gene product with the ubiquitin-related protein, SUMO-1.

L7 ANSWER 20 OF 26 MEDLINE on STN  
TI Endothelial dysfunction in the klotho mouse and downregulation of klotho gene expression in various animal models of vascular and metabolic diseases.

L7 ANSWER 21 OF 26 MEDLINE on STN  
TI Disruption of the klotho gene causes pulmonary emphysema in mice. Defect in maintenance of pulmonary integrity during postnatal life.

L7 ANSWER 22 OF 26 MEDLINE on STN  
TI Independent impairment of osteoblast and osteoclast differentiation in klotho mouse exhibiting low-turnover osteopenia.

L7 ANSWER 23 OF 26 MEDLINE on STN  
TI Development of a novel mouse model for human aging.

L7 ANSWER 24 OF 26 MEDLINE on STN  
TI Structure of the mouse klotho gene and its two transcripts encoding membrane and secreted protein.

L7 ANSWER 25 OF 26 MEDLINE on STN  
TI Herbal medicine and the study of aging in senescence-accelerated mice (SAMP1TA/Ngs).

L7 ANSWER 26 OF 26 MEDLINE on STN  
TI Age-associated and cell-type-specific neurofibrillary pathology in transgenic mice expressing the human mid-sized neurofilament subunit.

=> d 23 ab

L7 ANSWER 23 OF 26 MEDLINE on STN

=> d 23

L7 ANSWER 23 OF 26 MEDLINE on STN  
AN 1998376948 MEDLINE  
DN PubMed ID: 9711089  
TI Development of a novel mouse model for human aging.  
AU Kuroo M  
SO Nippon Ronen Igakkai zasshi. Japanese journal of geriatrics, (1998 May) Vol. 35, No. 5, pp. 353-7.  
Journal code: 7507332. ISSN: 0300-9173.  
CY Japan  
DT Journal; Article; (JOURNAL ARTICLE)  
LA Japanese  
FS Priority Journals  
EM 199809  
ED Entered STN: 17 Sep 1998  
Last Updated on STN: 17 Sep 1998  
Entered Medline: 8 Sep 1998

=> d 15

L7 ANSWER 15 OF 26 MEDLINE on STN  
AN 2001355073 MEDLINE  
DN PubMed ID: 11286943  
TI Disease model: human aging.  
AU Kuro-o M  
CS Department of Pathology, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Blvd, Dallas, TX 75390-9072, USA..  
kuroo.makoto@pathology.swmed.edu  
SO Trends in molecular medicine, (2001 Apr) Vol. 7, No. 4, pp. 179-81. Ref: 10  
Journal code: 100966035. ISSN: 1471-4914.  
CY England: United Kingdom  
DT Journal; Article; (JOURNAL ARTICLE)  
General Review; (REVIEW)  
LA English  
FS Priority Journals  
EM 200106  
ED Entered STN: 25 Jun 2001  
Last Updated on STN: 25 Jun 2001  
Entered Medline: 21 Jun 2001

=> d ab 15

L7 ANSWER 15 OF 26 MEDLINE on STN  
AB Very little is known about the molecular mechanisms of human aging. This, at least in part, derives from a paucity of appropriate animal models of aging. Until recently, the senescence-accelerated mouse was the only mammalian model of aging. However, novel mouse models that exhibit multiple aging phenotypes have been developed in the past few years by disruption of the klotho gene, the telomerase gene and the genes involved in premature aging syndromes. These mouse models are expected to be important tools for aging research.